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EXAMINER

ZELASKIEWICZ, CHRYSTINA E

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3621

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 23, 2010 has been entered.

Acknowledgements

2. This action is in reply to the RCE filed on March 23, 2010.
3. Claims 1-3, 5-14, and 17-18 are pending.
4. Claims 5-8, 13-14, and 18 were previously withdrawn.
5. Claims 1-3, 9-12, and 17 are examined below.
6. This Office Action is given Paper No. 20111103 for references purposes only.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-3 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter.

9. Under the broadest reasonable interpretation, claims 1-3 are directed to a computer program only.

10. "Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical 'things.' They are neither computer components nor statutory processes, as they are not 'acts' being performed." MPEP §2106.01 I. Because the claims recite only abstractions that are neither "things" nor "acts," the claims are not within one of the four statutory classes of invention.⁶ Because the claims are not within one of the four statutory classes of invention, the claims are rejected under 35 U.S.C. §101.

11. "Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material." MPEP §2106.01 I.

12. "A general purpose computer, or microprocessor, programmed to carry out an algorithm creates 'a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.'" *WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d 1339, 1348, 51 USPQ2d 1385, 1391 (Fed. Cir. 1999) citing *In re Alappat*, 33 F.3d 1526, 1545, 31 USPQ2d 1545, 1558 (Fed. Cir. 1994) (en banc).

13. In this case, claim 1 is an apparatus claim directed to a code reception unit, random number generation unit, code conversion unit, random number encryption unit, print data encryption unit, and a transmission unit. Because Applicant's specification does not lexicographically define "unit," Examiner uses the broadest reasonable interpretation to interpret "unit" as software (see claim interpretation below). Thus, Examiner interprets claims 1-3 as directed to software alone.

14. To overcome this particular 35 U.S.C. § 101 rejection and assuming the original specification supports such an amendment in accordance with 35 U.S.C. § 112 1st paragraph, Examiner recommends (by way of example only) Applicant amend claim 1 to state "a code reception computer."

Claim Rejections - 35 USC § 112, 2nd paragraph

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. Claim 1 states "a transmission unit adapted to transmit the encrypted random number, the converted personal identification code and the encrypted print data to a print control apparatus which is connected to the information processing apparatus via a network." This phrase renders the claim vague and indefinite because it is unclear

whether the scope of the claim is drawn to the subcombination of "an information processing apparatus" alone, or drawn to the combination of "an information processing apparatus" and "a print control apparatus."

18. Based on the preamble of claim 1, one of ordinary skill in the art could reasonably conclude that the claim is directed to the subcombination alone because the preamble states "an information processing apparatus." Furthermore, dependent claim 2 is drawn to the "information processing apparatus of claim 1."

19. Alternatively, the body of claim 1 recites "a transmission unit adapted to transmit the encrypted random number, the converted personal identification code and the encrypted print data to a print control apparatus which is connected to the information processing apparatus via a network." Based upon this language, claim 1 is directed to the combination of "an information processing apparatus" and "a print control apparatus."

20. Because a potential infringer of claim 1 would not know whether direct infringement required creation or possession of the subcombination alone (i.e. "an information processing apparatus") or the combination of "an information processing apparatus" and "a print control apparatus", claim 1 is indefinite under 35 U.S.C. §112 2nd paragraph.

21. If Applicant intends to claim only the subcombination "an information processing apparatus" in claim 1, then he should remove all positive recitations of "a print control apparatus" from the body of the claim. Alternatively, if Applicant intends to claim the

combination of "an information processing apparatus" and "a print control apparatus", then he should amend the preamble to objectively set forth his intent.

22. Examiner finds that because the claims are indefinite under 35 U.S.C. §112, 2nd paragraph, it is impossible to properly construe claim scope at this time. However, in accordance with MPEP §2173.06 and the USPTO's policy of trying to advance prosecution by providing art rejections even though these claims are indefinite, the claims are construed and the prior art is applied as much as practically possible.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 1-3, 9-12, and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chan et al. (US 6,378,070), in view of Ishiguro et al. (US 6,360,320), and further in view of Wu et al. (US 2002/0042884).

Claims 1, 9, 11, 17

25. Chan discloses the following limitations:

a. said information processing apparatus comprises:

- b. a random number generation unit (by secure printer process) adapted to generate a random number (session key) (abstract, C6 L14-28);
- c. a print data encryption unit (by secure printer process) adapted to encrypt print data (document) by using the random number (session key) for an encryption key (abstract, C6 L14-30);
- d. a transmission unit (print server 130) adapted to transmit the encrypted random number (encrypted session key) and the encrypted print data (encrypted document) to said print control apparatus (secure printer 140) (abstract, C6 L48-52);
- e. said print control apparatus comprises:
- f. a reception unit (secure printer 140) adapted to receive the encrypted random number (encrypted session key), the converted first personal identification code (intended recipient's identity) and the encrypted print data (encrypted document) from said information processing apparatus (abstract, C7 L21-38);
- g. a judgment unit (document store 130) adapted to judge whether or not the first personal identification code converted by said first code conversion unit is the same (recipient is the intended recipient) as the second personal identification code converted by said second code conversion unit (abstract, C7 L8-20);
- h. a print data decryption unit (secure printer 140) adapted to, in the case where said judgment unit judges that the converted first and second personal

identification codes are the same, decrypt the encrypted print data (document) by using the decrypted random number (session key) for a decryption key (abstract, C7 L42-49).

26. Chan does not disclose the following limitations:

- i. A first code reception unit... unit;
- j. A code conversion unit... function;
- k. A random number encryption... key;
- l. A transmission unit... apparatus;
- m. A second code reception unit... unit;
- n. A second code conversion unit... function;
- o. A random number decryption... key;
- p. Wherein neither... apparatus.

27. Ishiguro teaches the following limitations:

- q. a code conversion unit (DVD player) adapted to convert the received first personal identification code (ID concatenated with service key) by using a predetermined function (hash function) (abstract, figure 32, C6 L11-25, C7 L12-18, C8 L26-41);
- r. a transmission unit (DVD player) adapted to transmit the converted first personal identification code (license key) to said print control apparatus (personal computer) (C7 L29 - C9 L27);
- s. a second code conversion unit adapted to convert the received second personal identification code (ID concatenated with service key) by using a

predetermined function (hash function) (abstract, figure 32, C6 L11-25, C7 L12-18, C8 L26-41);

t. a random number decryption unit (personal computer) adapted to, in a case where said judgment unit judges that the converted first and second personal identification codes are the same (same license key), decrypt the encrypted random number (session key) by using the second personal identification code for a decryption key (C7 L29 – C8 L41).

28. Wu teaches the following limitations:

u. a first code reception unit adapted to receive a first personal identification code (ID, see [0102-0103]), the first personal identification code being input by a user of the information processing apparatus via a first operation unit;

v. a random number encryption unit adapted to encrypt (encrypts, see [0253]) the generated random number (random number, see [0253]) by using the first personal identification code (ID key, see [0253]) for an encryption key;

w. a second code reception unit adapted to receive a second personal identification code (ID, see [0102-0103, 0121]), the second personal identification code being input by a user of the print control apparatus via a second operation unit;

x. wherein neither the first personal identification code (ID, see [0102-0103]) used by the random number encryption unit nor the random number (random number, see [0253]) used by the print data encryption unit is supplied from an apparatus outside the information processing apparatus or is generated based

on information supplied from an apparatus outside the information processing apparatus.

29. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ishiguro to show a transmission unit adapted to transmit the converted first personal identification code to said print control apparatus because Ishiguro already teaches 1) transmitting an ID from a personal computer (print control apparatus) to a DVD player (transmission unit); 2) creating a license key, which is a hash value of the ID concatenated with a service key; and 3) only the specific computer decrypting the received text using the same license key as the DVD player (abstract, figure 32, C6 L11-25, C7 L29 - C9 L27). A suggestion exists for the DVD player to transmit the license key (converted identification code) to the personal computer because this helps to identify the text, and another electronic apparatus will not be capable of decrypting the encrypted text by means of a stolen license key (C9 L17-27).

30. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the secure printing of Chan, in view of the code conversion unit and random number decryption unit of Ishiguro, with the encrypted random number of Wu because 1) a need exists to protect sensitive documents from malicious parties that could intercept or monitor the transfer of data between a local computer and network printer, or could read the sensitive document at the network printer (Chan C1 L50-67, C2 L1-5); 2) a need exists to verify the destination apparatus to prevent unauthorized access (Ishiguro C1 L49-55, C2 L1-32); and 3) a need exists for controlling the number of copies made of a document and its authenticity (Wu [0011]). Inputting a personal

identification code and applying a hash function to said identification code can help ensure secure communications and prevent unauthorized access (Ishiguro C6 L11-25). Using an ID to encrypt a random number will ensure that the proper person receives the document (Wu [0103, 0253]).

Claim 2

31. Chan, in view of Ishiguro and Wu, discloses all the limitations above. Chan does not disclose the following limitations:

y. Said code... function.

32. Ishiguro teaches the following limitations:

z. said code conversion unit converts the personal identification code (ID concatenated with service key) by using a one-way function (one-way hash function) (abstract, figure 32, C6 L11-25).

33. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the secure printing of Chan, in view of the one-way hash function of Ishiguro, with the encrypted random number of Wu because 1) a need exists to protect sensitive documents from malicious parties that could intercept or monitor the transfer of data between a local computer and network printer, or could read the sensitive document at the network printer (Chan C1 L50-67, C2 L1-5); 2) a need exists to verify the destination apparatus to prevent unauthorized access (Ishiguro C1 L49-55, C2 L1-32); and 3) a need exists for controlling the number of copies made of a document and its authenticity (Wu [0011]). Applying a hash function to an identification

code can help ensure secure communications and prevent unauthorized access (Ishiguro C6 L11-25).

Claim 3

34. Chan, in view of Ishiguro and Wu, discloses all the limitations above. Chan does not disclose the following limitations:

aa. Said code conversion... code.

35. Ishiguro teaches the following limitations:

bb. said code conversion unit generates a hash value (license key) of the personal identification code (ID concatenated with service key) (abstract, figure 32, C6 L11-25).

36. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the secure printing of Chan, in view of the one-way hash function of Ishiguro, with the encrypted random number of Wu because 1) a need exists to protect sensitive documents from malicious parties that could intercept or monitor the transfer of data between a local computer and network printer, or could read the sensitive document at the network printer (Chan C1 L50-67, C2 L1-5); 2) a need exists to verify the destination apparatus to prevent unauthorized access (Ishiguro C1 L49-55, C2 L1-32); and 3) a need exists for controlling the number of copies made of a document and its authenticity (Wu [0011]). Applying a hash function to an identification code can help ensure secure communications and prevent unauthorized access (Ishiguro C6 L11-25).

Claim 10

37. Chan, in view of Ishiguro and Wu, discloses all the limitations above.

Furthermore, Chan discloses the following limitations:

cc. a print processing unit (secure printer 140) adapted to execute a print process (prints) of the decrypted print data (abstract).

Claim 12

38. Chan, in view of Ishiguro and Wu, discloses all the limitations above.

Furthermore, Chan discloses the following limitations:

dd. a transmission unit adapted to transmit the encrypted random number, the converted personal identification code and the encrypted print data (see claim 1).

Response to Arguments

39. Applicant argues that the prior art does not recite a random number encryption unit adapted to encrypt a random number using a PIN input to the apparatus by a user for an encryption key (RCE p 12).

ee. This argument is moot in light of the new art above, Wu.

Claim Interpretation

40. Unless expressly noted otherwise by Examiner, Examiner maintains her position on claim interpretation as noted in the December 23, 2009 Final Office Action,

Paragraph Nos. 24-26 (Paper No. 20091215).

41. After another careful review of the original specification and unless expressly noted otherwise by Examiner, Examiner maintains her position that Applicant is not his own lexicographer. See MPEP § 2111.01 IV.

42. After review of the March 23, 2010 Claim Amendments, Examiner finds that because the examined claims recite neither “step for” nor “means for,” the examined claims fail Prong (A) as set forth in MPEP §2181 I. Because all examined claims fail Prong (A), Examiner concludes that all examined claims do not invoke 35 U.S.C. §112, 6th paragraph. See also Ex parte Miyazaki, 89 USPQ2d 1207, 1215-16 (B.P.A.I. 2008) (precedential).

43. Examiner hereby adopts the following definitions under the broadest reasonable interpretation standard. In accordance with *In re Morris*, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1029 (Fed. Cir. 1997), Examiner points to these other sources to support her interpretation of the claims.¹ Additionally, these definitions are only a guide to claim terminology since claim terms must be interpreted in context of the surrounding claim language. Finally, the following list is not intended to be exhaustive in any way:

ff. ***apparatus*** “an instrument or appliance designed for a specific operation.”
Webster’s Ninth New Collegiate Dictionary, Merriam-Webster Inc., Springfield
MA, 1986;

¹ While most definition(s) are cited because these terms are found in the claims, Examiner may have provided additional definition(s) to help interpret words, phrases, or concepts found in the definitions themselves or in the prior art.

gg. ***storage media*** “The various types of physical material on which data bits are written and stored, such as floppy disks, hard disks, tape, and optical discs.”

Computer Dictionary, 5th Edition, Microsoft Press, Redmond, WA, 2002;

hh. ***transmit*** “To send information over a communications line or a circuit.”

Computer Dictionary, 3rd Edition, Microsoft Press, Redmond, WA, 1997;

ii. ***unit*** “(3) A software component that is not subdivided into other components.” IEEE Standard Computer Dictionary, The Institute of Electrical and Electronics Engineers, New York, NY, 1990.

44. Note, in this case claim 9 is a system claim that recites the limitation “information processing apparatus” and “print control apparatus.” Based upon the broadest reasonable interpretation, Examiner finds that an “information processing apparatus” and a “print control apparatus” are hardware (see definition of “apparatus” above). Thus, Examiner interprets claims 9-10 as necessarily requiring a machine because an apparatus requires use of a machine.

45. Note, in this case claim 11 is a method claim that recites the limitation “transmitting the encrypted random number, the converted personal identification code and the encrypted print data to a print control apparatus via a network.” Based upon the broadest reasonable interpretation, Examiner finds that a “print control apparatus” is hardware (see definition of “apparatus” above). Thus, Examiner interprets claims 11-12 as necessarily requiring a machine because an apparatus requires use of a machine.

46. Note, in this case claim 17 is directed to a “computer-readable storage medium which stores a computer program for causing a computer to execute an information

processing method.” Based upon the broadest reasonable interpretation, Examiner finds that a “computer-readable storage medium” must be hardware (see definition of “storage media” above). Therefore, the “computer-readable storage medium” cannot be interpreted to be a signal. Thus, Examiner interprets claim 17 as requiring a non-transitory medium.

47. In light of Applicants’ choice to pursue product claims, Applicants are reminded that functional recitation(s) using the word and/or phrases “for”, “adapted to”, or other functional language (*e.g.* see claims 1, 9-10, and 17 which recite “adapted to”) have been considered but are given little patentable weight because they fail to add any structural limitations and are thereby regarded as intended use language. To be especially clear, all limitations have been considered. However, a recitation of the intended use of the claimed product must result in a structural difference between the claimed product and the prior art in order to patentably distinguish the claimed product from the prior art. If the prior art structure is capable of performing the intended use, then it reads on the claimed limitation. *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) (“The manner or method in which such a machine is to be utilized is not germane to the issue of patentability of the machine itself.”); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). See also MPEP §§ 31.06 II (C.), 2114 and 2115. Unless expressly noted otherwise by Examiner, the claim interpretation principles in the paragraph apply to all claims currently pending.

48. In accordance with *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002), Examiner finds that the reference by White, Ron, “How Computers

Work”, Millennium Ed., Que Corporation, Indianapolis, IN, 1999, is additional evidence of what is basic knowledge or common sense to one of ordinary skill in this art. This reference is cited in its entirety. Moreover, because this reference is directed towards beginners (see *e.g.* “User Level Beginning...”), because of the reference’s basic content (which is self-evident upon examination of the reference), and after further review of the entire record including the prior art now of record in conjunction with the factors as discussed in MPEP §2141.03 (where practical), Examiner finds that this reference is primarily directed towards those of low skill in this art. Because this reference is directed towards those of low skill in this art, Examiner finds that one of ordinary skill in this art must, at the very least, be aware of and understand the knowledge and information contained within this reference.

Conclusion

49. Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to Chrystina Zelaskiewicz whose telephone number is 571.270.3940. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner’s supervisor, Andrew Fischer can be reached at 571.272.6779.

50. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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/Chrystina Zelaskiewicz/
Examiner, Art Unit 3621
November 3, 2011